REMARKS

By this Amendment, Applicants amend claim 37. Claims 37 and 38 remain pending in this application. In the Office Action of August 25, 2004,[1] claims 37 and 38 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,188,478 to *Fuchs et al.* ("*Fuchs*") in view of U.S. Patent No. 6,620,576 to *Raguin* ("*Raguin*").

Applicants traverse the rejection of claim 37-38 under 35 U.S.C. § 103(a) because a case for *prima facie* obviousness has not been established. To establish *prima facie* obviousness under 35 U.S.C. § 103(a), three requirements must be met. First, the applied references, taken alone or in combination, must teach or suggest each and every element recited in the claims. *See* M.P.E.P. § 2143.03 (8th ed. 2001). Second, there must be some suggestion or motivation, either in the reference(s) or in the knowledge generally available to one of ordinary skill in the art, to combine or modify the reference(s) in a manner resulting in the claimed invention. Third, a reasonable expectation of success must exist. Moreover, each of these requirements must "be found in the prior art, and not be based on applicant's disclosure." M.P.E.P. § 2143 (8th ed. 2001).

Initially, Applicants submit that *Raguin* is nonanalogous art and therefore an improper reference against Applicants' claims under 35 U.S.C. § 103(a). *Raguin* is not in the same field of endeavor as Applicants' claimed invention. *Raguin* relates to fabricating structures on a substrate using a photosensitive material and is dissimilar to claims 37 and 38, which are directed to an imaging system for capturing an image of objects randomly positioned on a moving conveyor belt. Although *Raguin* mentions a conveyor belt, it does so within the context of

[1] The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement or characterization in the Office Action.

coating photoresist onto a substrate. Further, *Raguin* is not reasonably pertinent to the particular problem addressed by claims 37 and 38. That is to say, *Raguin* would not logically have commended itself to an inventor's attention in considering the problems associated with capturing images of objects randomly positioned on a moving conveyor belt. *Raguin* thus should be regarded as nonanalogous art and should not be used as references against the present application under 35 U.S.C. § 103(a). *See* M.P.E.P. § 2141.01(a). For at least these reasons, the § 103(a) rejection of claims 37 and 38 should be withdrawn. *Raguin*'s status as nonanalogous art notwithstanding, *prima facie* obviousness has not been established for at least the following reasons.

Independent claim 37 recites a combination including:

> a primary lens assembly for converging a beam of light reflected by a surface of . . . [a] conveyor belt and by objects randomly positioned on the surface;
>
> a secondary lens assembly for converging said beam of light from said primary lens assembly;
>
> a phase mask for altering the beam of light converged by the secondary lens assembly such that the imaging system is insensitive to small distances between objects positioned on said conveyor belt and the primary lens assembly; and
>
> a beamsplitter for splitting the altered beam of light to a first image detector and to a second image detector disposed at a 90° angle with respect to the first image detector. . . .

Fuchs does not disclose or suggest at least a "primary lens assembly," as claimed. The Examiner notes *Fuchs*'s disclosure of a "lens pair 70" (Office Action "OA" at 2). *Fuchs's* lens pair 70, however, does not constitute the claimed "primary lens assembly." Lens pair 70 does not "[converge] a beam of light reflected by a surface of . . . [a] conveyor belt and by objects randomly positioned on the surface," as claimed. According to *Fuchs*, a microchip laser 52 "emits an excitation pulse 12 that passes through a beam-splitter 65" (col. 3, lines 50-52). A

portion of that excitation pulse is focused onto a phase mask 62, which "diffracts the pulse 12 into two excitation pulses [12a, 12b]" (col. 3, lines 50-59; col. 4, lines 21-23). Lens pair 70 focuses these diffracted excitation pulses (12a, 12b) diverging from phase mask 62 (col. 4, lines 35-42; FIG. 1A). A lens pair that focuses excitation pulses diverging from a phase mask does not constitute a primary lens assembly that "[converges] a beam of light reflected by a surface of . . . [a] conveyor belt and by objects randomly positioned on the surface," as claimed. Further, as affirmed by the Examiner, *Fuchs* is silent . . . [about] the use of a conveyor belt" (OA at 3).

In alleging that *Fuchs* discloses the claimed "secondary lens assembly," the Examiner states that *Fuchs*'s focusing lens 64 is a "primary lens" (OA at 2). *Fuchs*'s focusing lens 64, however, does not constitute the claimed "primary lens assembly." Focusing lens 64 operates to focus a reflected portion of excitation pulse emitted from a laser onto phase mask 62. Lens 64 does not "[converge] a beam of light reflected by a surface of . . . [a] conveyor belt and by objects randomly positioned on the surface," as claimed. Indeed, Fuchs does not teach or suggest a "primary lens assembly," as recited in claim 37.

Fuchs also fails to disclose or suggest a "a secondary lens assembly for converging said beam of light from said primary lens assembly," as claimed. The Examiner alleges that *Fuchs*'s collimating lens 60 "converges [a] beam of light from primary lens 64 . . . " (OA at 2). Applicants disagree with the Examiner's interpretation of *Fuchs*. Collimating lens 60 does not converge a beam of light from focusing lens 64, as alleged. Instead, a portion of an excitation pulse 12 emitted from laser 52 impinges collimating lens 60 and then focusing lens 64, which focus the pulse onto phase mask 62 (col. 3, lines 50-59; FIG. 1A). In addition, neither *Fuchs*'s collimating lens 60 nor any other disclosed element converges the beam of light focused by lens pair 70, which the Examiner asserted to be consistent with the claimed "primary lens assembly."

In fact, the reflected excitation pulse impinges lens 60 before it is diffracted (by phase mask 62) and focused by lens pair 70.

Fuchs further fails to disclose or suggest a "phase mask," as recited in claim 37. Although *Fuchs* mentions a "phase mask 62" that dithers an excitation pulse, it does not disclose "a phase mask for altering the beam of light converged by the secondary lens assembly such that the imaging system is insensitive to small distances between objects positioned on said conveyor belt and the primary lens assembly," as claimed.

In addition, *Fuchs* does not disclose or suggest a "beamsplitter for splitting the altered beam of light to a first image detector and to a second image detector disposed at a 90° angle with respect to the first image detector." The Examiner alleges that *Fuchs*'s beam-splitter 65 splits a beam of light to a plurality of image detectors (OA at 3). Applicants disagree. *Fuchs*'s beam-splitter does not split a beam of light to a plurality of image detectors, as alleged. Instead, beam-splitter 65 reflects a portion of an excitation pulse emitted from a laser into detector 67 and reflects the remaining portion into collimating lens 60 and focusing lens 64 (col. 3, lines 50-59). The portion that impinges on lenses 60 and 64 is ultimately absorbed by substrate 11, it is not directed to detector 80 (col. 4, lines 52-54). Detector 80 receives a diffracted portion of a probe beam (20') emitted from a probe laser 54 (col. 4, lines 53-65). Accordingly, even if detectors 67 and 80 were consistent with the claimed detectors (Applicants disputing that notion), *Fuchs* does not disclose a beam-splitter that splits a beam of light to those detectors. Further, *Fuchs* does not disclose or suggest a "beamsplitter for splitting the . . . beam of light [altered by the phase mask]," as claimed. *Fuchs*'s phase mask 62 does not constitute the claimed phase mask, and, moreover, the excitation pulse is reflected by beam-splitter 65 before it is directed to phase mask

62. For at least the foregoing reasons, *Fuchs* does not disclose or suggest each and every feature of claim 37.

Raguin does not cure *Fuchs*'s deficiencies. *Raguin* describes a method "for fabricating a structure on a substrate with a low contrast photoresist" (Abstract). Although *Raguin* discloses a conveyor belt, *Raguin* does not teach or suggest at least a primary lens assembly, secondary lens assembly, phase mask, and beamsplitter, as recited in claim 37. Accordingly, the applied references, taken alone or in combination, do not teach or suggest each and every feature of claim 37. As such, *prima facie* obviousness has not been established.

Furthermore, *prima facie* obviousness has not been established at least because the requisite motivation to modify *Fuchs* in view of *Raguin* is lacking. Determinations of obviousness must be supported by evidence on the record. See *In re Zurko*, 258 F.3d 1379, 1386 (Fed. Cir. 2001) (finding that the factual determinations central to the issue of patentability, including conclusions of obviousness by the Board, must be supported by "substantial evidence"). Further, the desire to combine references must be proved with "substantial evidence" that is a result of a "thorough and searching" factual inquiry. *In re Lee*, 277 F.3d 1338, 1343-1344 (Fed. Cir. 2002) (quoting *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52).

In this case, the Office Action does not show, by substantial evidence, that a skilled artisan considering *Fuchs* and *Raguin*, and not having the benefit of Applicants' disclosure, would have been motivated to combine those references in a manner resulting in Applicants' claimed combination. The Examiner alleges that a skilled artisan would have modified *Fuchs* in view of *Raguin* because "[i]nspecting substrate images at different axis would have been desirable . . . in the photo resistive art . . ." (OA at 4). This allegation in the Office Action is not

properly supported and does not establish that a skilled artisan would have modified *Fuchs* as alleged. Applicants call attention to M.P.E.P. § 2143.01, which makes clear that: "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination" (citations omitted). Applicants submit that the conclusions in the Office Action were not reached based on facts gleaned from the cited references and that, instead, teachings of the present application were improperly used to reconstruct the prior art.

For at least the foregoing reasons, *prima facie* obviousness has not been established with respect to claim 37. The rejection of claim 37 under 35 U.S.C. § 103(a) should therefore be withdrawn. The rejection of claim 38 should be withdrawn as well, at least because this claim depends from claim 37. Further, the applied references, whether taken alone or in combination, do not teach or suggest the features of claim 38. Applicants thus request withdrawal of the § 103(a) rejection of claims 37 and 28 and the timely allowance of these claims.

The claimed invention is allowable over the references cited against this application. Applicants request the Examiner's reconsideration of the application in view of the foregoing, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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